

Serial No.: 10/024,573  
Attorney Docket: 178/50688

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently amended) A centrifugal separator for separating solid contaminants from a liquid supplied thereto at elevated pressure, said separator comprising:

a housing having a base part and a cover part releasably secured to each other, and

a separation rotor contained in said housing between the base part and cover parts, said rotor being mounted in said housing by a spindle so as to be rotatable about an axis extending between the base part and cover parts and to be displaceable along the axis between limits defined by said base part and cover parts;

wherein said centrifugal separator further comprises a rotor restraint comprising:

a restraining surface forming part of, or carried by, the rotor and extending radially and circumferentially of the rotor and facing away from the base part, and

an abutment carried by the base part and having an abutment surface overlying the restraining surface at or beyond the limit of axial displacement of the rotor from the base part defined by the cover part, said abutment being operable to prevent further axial displacement of the rotor away from the base part if the cover part is removed; and

wherein the abutment comprises an axially extending body having, at a first end, a radially directed mounting flange for securing the abutment to the base part of the housing so that axial force exerted by the elevated pressure is unable to lift the rotor and cover away from the base part, and, at a second end, a radially inwardly directed flange overlying the restraining surface.

2. (Original) A centrifugal separator according to claim 1, wherein the restraining surface extends circumferentially completely around the rotor.

3. (Original) A centrifugal separator according to claim 1, wherein the abutment surface comprises a circumferentially complete annular surface.

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4. (Original) A centrifugal separator according to claim 1, wherein the restraining surface comprises a flange extending radially outwardly of a peripheral wall of the rotor.

5. (Original) A centrifugal separator according to claim 4, wherein the rotor comprises a first component part disposed adjacent the base part of the housing and a complementary second component part disposed adjacent the cover part, said first and second component parts being joined to each other at a peripheral seam defining said flange.

6. (Previously amended) A centrifugal separator according to claim 1, wherein the abutment is releasably secured to the base part and removable therefrom to permit removal of the rotor by axial displacement away from the base part.

7. (Cancelled)

8. (Currently amended) A centrifugal separator according to claim 7 1, wherein the axially extending body is a tubular, circumferentially continuous body.

9. (Original) A centrifugal separator according to claim 8, wherein the abutment is configured to engage the base part by approach thereto in an axial direction and to be secured to the base part by rotation of the abutment about its axis.

10. (Currently amended) A centrifugal separator for separating solid contaminants from a liquid supplied thereto at elevated pressure, said separator comprising:

a housing having a base part and a cover part releasably secured to each other, and

a separation rotor contained in said housing between the base part and cover parts, said rotor being mounted in said housing by a spindle so as to be rotatable about an axis extending between the base part and cover parts and to be displaceable along the axis between limits defined by said base part and cover parts;

wherein said centrifugal separator further comprises a rotor restraint comprising:

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a restraining surface forming part of, or carried by, the rotor and extending radially and circumferentially of the rotor and facing away from the base part, and

an abutment carried by the base part and having an abutment surface overlying the restraining surface at or beyond the limit of axial displacement of the rotor from the base part defined by the cover part, said abutment being operable to prevent further axial displacement of the rotor away from the base part if the cover part is removed;

wherein the abutment is releasably secured to the base part and removable therefrom to permit removal of the rotor by axial displacement away from the base part;

wherein the abutment comprises an axially extending body having, at a first end, a radially directed mounting flange for securing the abutment to the base part of the housing, and, at a second end, a radially inwardly directed flange overlying the restraining surface;

wherein the axially extending body is a tubular, circumferentially continuous body;

wherein the abutment is configured to engage the base part by approach thereto in an axial direction and to be secured to the base part by rotation of the abutment about its axis; and

wherein the mounting flange has at least one mounting aperture therethrough having a varying radial width circumferentially and the base part carries a corresponding number of headed fasteners each dimensioned to pass through a said mounting aperture at the point of greatest radial width but not at the point of least radial width of the mounting aperture.

11. (Original) A centrifugal separator according to claim 1, wherein the spindle which mounts the rotor comprises a first stub axle defined between the base part of the housing and a first end region of the rotor, and second stub axle defined between the cover part of the housing and a second end region of the rotor opposite said first end region.

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12. (Original) A centrifugal separator according to claim 1, further comprising warning means for providing an indication of the presence or absence of the abutment.

13. (Currently amended) A centrifugal separator for separating solid contaminants from a liquid supplied thereto at elevated pressure, said separator comprising:

a housing having a base part and a cover part releasably secured to each other, and

a separation rotor contained in said housing between the base part and cover parts, said rotor being mounted in said housing by a spindle so as to be rotatable about an axis extending between the base part and cover parts and to be displaceable along the axis between limits defined by said base part and cover parts;

wherein said centrifugal separator further comprises a rotor restraint comprising:

a restraining surface forming part of, or carried by, the rotor and extending radially and circumferentially of the rotor and facing away from the base part, and

an abutment carried by the base part and having an abutment surface overlying the restraining surface at or beyond the limit of axial displacement of the rotor from the base part defined by the cover part, said abutment being operable to prevent further axial displacement of the rotor away from the base part if the cover part is removed; and

wherein the centrifugal separator further comprising means responsive to the presence of the abutment to facilitate securing of the cover part to the base part, whereby the cover part is prevented from being attached to the base part if the abutment is missing.

14. (Currently amended) A centrifugal separator for separating solid contaminants from a liquid supplied thereto at elevated pressure, said separator comprising:

a housing having a base part and a cover part releasably secured to each other, and

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a separation rotor contained in said housing between the base part and cover parts, said rotor being mounted in said housing by a spindle so as to be rotatable about an axis extending between the base part and cover parts and to be displaceable along the axis between limits defined by said base part and cover parts;

wherein said centrifugal separator further comprises a rotor restraint comprising:

a restraining surface forming part of, or carried by, the rotor and extending radially and circumferentially of the rotor and facing away from the base part, and

an abutment carried by the base part and having an abutment surface overlying the restraining surface at or beyond the limit of axial displacement of the rotor from the base part defined by the cover part, said abutment being operable to prevent further axial displacement of the rotor away from the base part if the cover part is removed; and

wherein the centrifugal separator further comprising interlock means responsive to the presence of the abutment to enable supply of the liquid to the rotor, whereby the liquid is blocked from the rotor if the abutment is missing.

15. (New) A centrifugal separator according to claim 1, wherein the mounting flange comprises at least one mounting aperture having a varying radial width circumferentially, and the base part has a corresponding number of headed fasteners each adapted to pass through the at least one mounting aperture at a point of greatest radial width but prevented from passing through at a point of least radial width.